glass layer, such that at least a portion of the metal-containing layer diffuses into the chalcogenide glass layer; and,

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after said step of irradiating, exposing an outer surface of the chalcogenide glass layer to an iodine comprising fluid, wherein said iodine comprising fluid removes at least a portion of said outer surface.

38. (amended) The method of claim 37, wherein the potassium iodide solution comprises from 5 to about 30 grams I_2 per liter of a from 20% to about a 50% potassium iodide solution.

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39. (amended) The method of claim 34, wherein the irradiating is effective to form Ag_2Se as at least part of the outer surface, the etching being effective to etch away at least some of the Ag_2Se.

42. (amended) A method of forming a chalcogenide structure, comprising:

forming a first conductive layer on a semiconductor substrate;

forming a chalcogenide glass layer over said first conductive layer;

forming a metal-containing layer over said chalcogenide glass layer;

D3

irradiating said metal-containing layer to break a chalcogenide bond of the chalcogenide glass layer at the interface of the metal-containing layer and chalcogenide glass layer thereby creating an outside surface;

removing at least a portion of said outside surface by etching with an iodine comprising fluid; and,

after said step of removing at least a portion of said outside surface, forming a second conductive layer over at least a portion of the outside surface remaining after said act of removing.

46. (amended) The method of claim 45, wherein the potassium iodide solution comprises from 5 to about 30 grams I_2 per liter of a from 20% to about a 50% potassium iodide solution.

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47. (amended) The method of claim 42, wherein the irradiating is effective to form Ag_2Se as at least part of the outside surface, the etching being effective to etch away at least some of the Ag_2Se.

Please add new claim 51 as follows:

51. (new) A method of forming a chalcogenide structure, comprising:

forming a first conductive layer on a semiconductor substrate;

forming a chalcogenide glass layer over said first conductive layer;

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forming a metal-containing layer over said chalcogenide glass layer;

irradiating said metal-containing layer to break a chalcogenide bond of the chalcogenide glass layer at the interface of the metal-containing layer and chalcogenide glass layer thereby creating an outside surface, said step of irradiating is effective to form Ag_2Se as at least part of the outside surface;

removing at least a portion of said outside surface by etching with an iodine comprising fluid, said etching being effective to etch away at least some of the Ag_2Se; and,

after said step of removing at least a portion of said outside surface, forming a second conductive layer over at least a portion of the outside surface remaining after said act of removing.